

## REMARKS/ARGUMENTS

Claims 45, 62, 63, 70, 71 and 72 have been amended to address concerns raised by the Examiner. The amendments are fully supported in the specification and do not add new matter. Claims 45-51, 62, 63, and 70-72 are currently under consideration.

### Rejections under 35 USC 112, second paragraph

The Office Action alleges that the phrases "cell residue of yeast" and "cell wall fractions" are indefinite. Applicants disagree with the Examiner's interpretation. However, in the interest of expediting prosecution, claims reciting these terms have been amended to further clarify what is encompassed by the terms.

The Office Action alleges that the phrase "treated with enzymes" is indefinite. Applicants disagree with the Examiner's interpretation. However, in the interest of expediting prosecution, claims reciting this term have been amended to further clarify enzymes that are encompassed by the term. Support for the amendment is found, *e.g.*, in the specification at page 10, lines 9-20.

In view of these amendments, applicants request that the rejections be withdrawn.

### Rejections under 35 USC 103

The Office Action rejects all of the claims under consideration under 35 U.S.C. 103(a) as allegedly being rendered obvious by Shank, U.S. 4,001,480 ("Shank") in view of Jamas *et al.*, U.S. 4,962,094 ("Jamas *et al.* "). Applicants disagree with this rejection.

Present independent claims 45, 70, 71 and 72 are directed to a surface coating process wherein the coating agent is prepared by a method involving removing internal soluble constituents from yeast by treating the yeast cells with enzymes and subsequently removing the internal soluble components with an acidic aqueous solution and a separation step. The coating agent is then used to coat a material of interest.

By contrast, the method of Shank is not directed to a coating agent prepared by removing internal soluble cell constituents from yeast. Even if the reference suggested that yeast can be treated with proteolytic enzymes, it does not suggest or disclose that, following the treatment with enzymes, (1) the yeast are treated with a solution that allows internal soluble cell constituents to exit from the yeast; (2) the yeast are treated with an acidic aqueous solution; or (3) the treatment with an acidic aqueous solution is followed by a step (*e.g.*, a centrifugation

step) to separate the cell residue from the internal soluble cell constituents. The reference clearly does not teach the claimed method of, *e.g.*, preparing a coating agent comprising yeast cell fractions that consist essentially of cell residue from yeast from which internal soluble cell constituents have been removed by treating yeast cells with enzymes, and subsequently with an acidic aqueous solution followed by a separation step. Furthermore, the reference does not suggest or disclose using a coating agent prepared by a method like that of the present invention (*e.g.* spray coating a material of interest).

Rather, the method of Shank involves growing microorganisms, such as yeast, under conditions that produce a fat content in the microorganisms (microcapsules) of about 40-60% by weight, and introducing a fat-soluble substance into the microorganisms (encapsulating the substance). The method of the reference is different and results in a product with different properties from a product made by the presently claimed method.

Clearly, Shank does not suggest or disclose the need for, *e.g.*, removing internal soluble cell constituents of yeast by a method comprising treating them with an aqueous acid solution followed by a separation step, or the use of such a coating agent.

The secondary reference cited by the Examiner, Jamas *et al.*, does not remedy the deficiencies of Shank. For example, although Jamas *et al* may teach that treating glucan (after its extraction from yeast) with acid can reduce the degree of  $\beta(1-6)$  cross-linking, thereby increasing the water holding capacity of the whole glucan, it does not teach that treatment of yeast (*e.g.* yeast which have been treated with enzymes) with an aqueous solution, in particular an acidic aqueous solution, followed by a separation step, can be used to remove internal soluble cell constituents from the yeast to provide a coating agent, or that such a coating agent can then be used to coat a material of interest.

Rather, Jamas *et al.* is directed to a method for preparing a purified glucan dietary additive to be used as a source of dietary fiber. Acid treatment of the glucan is used by Jamas *et al.* to increase the water-holding capacity of the glucan, which "is useful in oral and tube feeding formulations and digestive aids to act as a stool bulking agent, and, thus, as a preventative to diarrhea" (col. 4, lines 12-16). The purified glucan prepared by a method of the reference exhibits very different properties from a product made by the presently claimed method. For example, the product of the reference is purified to minimize other cell wall components, including glycogen, protein and chitin (see, *e.g.*, the reference at col. 3, lines 38-43); this purified

product differs from the more complex composition of the coating material of the present invention (as recited, *e.g.*, in claim 47).

Therefore, the combination of the two references cited by the Examiner does not render the claimed invention obvious. Further, no rationale is provided for combining the references.

As for dependent claim 48 (which recites the use of a plasticizer), this claim contains all of the elements recited in independent claim 45, and thus is not rendered obvious by the cited references for the reasons set forth above.

In view of the preceding amendments and arguments, it is believed that the application is in condition for allowance, which action is respectfully requested.

Should any additional fees be deemed due, please charge such to our Deposit Account No. 22-0261, and notify the undersigned accordingly.

Respectfully submitted,

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